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THOS. H. McCOLLIN, Managing Editor.

JULIUS F. SACHSE, Editor.

XANTHUS SMITH, Associate Editor.

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THE LESSONS OF THE EXHIBITION.

THE sixth annual exhibition, held under the agreement between the Photographic Society of Philadelphia, Society of Amateur Photographers of New York, and the Boston Camera Club, and which was open to all photographers of the world, held under the auspices of the Photographic Society of Philadelphia, from April 17th to 29th, at the galleries of the Pennsylvania Academy of Fine Arts, Broad and Cherry Streets, Philadelphia, is an accomplished fact and proved an unqualified success in every particular. Too much praise cannot be accorded to the committee having the details in charge for the manner in which they brought the matter to a successful issue, as was recognized by all who were fortunate enough to be present at the private reception given to the members and their friends on the evening of Saturday, April 15th.

Among the first things to strike the visitor on entering the galleries is the large number of entries, and the universal excellence of the individual exhibits, together with the prevalence of platinum and other effects to the almost total exclusion of the old albumen print.

The total number of exhibitors, according to the catalogue, counts up to 187 persons; of these 178 appear in 1,168 entries

of photographs, 7 exhibit lantern slides only, and 2 transparencies.

The total number of photographs exhibited in the above entries is in round numbers at least 2,000. Of lantern slides, 62 sets, of six each, show a total of 372 slides, distributed among twenty-six exhibitors; transparencies, three exhibitors enter twenty-four subjects.

Of the exhibitors 91 are members of the three associated clubs, 37 from other American clubs. Members of foreign clubs 39, the others being merely individual exhibitors not identified with any clubs. Among the foreign clubs, Great Britain, Australia, Canada, Japan, and the Argentine Republic are represented.

The above showing is the more gratifying when it is taken into consideration that as an exhibition of photographic progress it is second to none ever held in this country, the great Centennial Exhibition in 1876 not excepted. At the latter there were 136 home and 152 foreign exhibitors from all parts of the world, making a grand total of 287 exhibits; these, however, included everything from a dry-plate camera to a microscope watch charm,—accessories, card mounts, picture frames, lenses, optical lanterns and kindred subjects, consequently at the present day it would be difficult without great labor to give the exact number of purely photographic exhibits at that great fair. However, it is doubtful whether the number of prints exceeded, or even approached, the number now on exhibition in the galleries of the Philadelphia Academy of Fine Arts.

Another matter for congratulation is the percentage of exhibitors to the membership of the three home clubs under whose auspices the show was held. The greatest feature, however, of all, in our estimation, is the little sentence in the catalogue under almost every entry, viz.: "All work of the exhibitor." This appears in 133 cases out of a total of 178, while in 35 the exposure and development only was the work of the exhibitor. Then, again, we find such remarks as "No Retouching," "Plates Own Make," "Including Making Plates," etc. This is as it should be, and the committee in its difficult task has done wisely in giv^g

such applicants the preference who at least did the greater part of the work, all other things being equal. We believe that this is the first general exhibition where the lines have been so closely drawn. The effect of this wise course is shown in the appreciation of the result by the general as well as the photographic public.

Now as to the lessons taught by the exhibition. Independent of the photographic education it affords to the general public, it has shown several important facts, the most important one of which is, perhaps, that the days of the old-style albumen print have departed. From all parts of the world came prints made by the platinum, bromide, and kindred processes, showing that the movement for the supercedure of albumenized paper is a general one among all scientific photographic workers.

Another lesson taught by this exhibition is, that photography, intelligently applied, is capable of producing works of art which, from an artistic standpoint, are second to none in monochrome, no matter how produced.

Then, again, this exhibition must show the average photographic bread-winner how great are the possibilities in the art-science for future development, and application to the professional and commercial departments. The general public, from whom the professional draws his sustenance, is always on the alert for something new. By carefully studying an exhibition like the present one, many new ideas can be obtained which may bring a golden harvest.

It teaches us that the photograph has ceased to be a silver print, with its attendant glossy surface, intended to be simply a graphic record of some interesting occasion, which would fade almost as soon as the event portrayed passes out of memory.

The exhibits show the great opportunities for skilled and artistic work when the camera is in the hands of intelligent and conscientious workers.

The absence of the commercial feature in the American exhibits is also a pleasing feature, whereas almost every English exhibit bears the legend "For Sale." The lesson which this teaches is obvious to all.

Another interesting lesson brought out prominently, is that a comparison of the home product with the choicest foreign specimens, show that our three local home clubs in general, and the Photographic Society of Philadelphia in particular, are second to none in either art or technique, showing that our home organizations are fully up to the wonderful advances which are certainly being made throughout the civilized world.

The most important lesson taught by the exhibition is the falsity of the charge, so frequently made, that the amateur photographer is a factor detrimental to the professional bread-winner. A mere glance at the screens will prove to the most prejudiced mind that the professional photographer has nothing to fear from the amateur. While it is true that the professional photographer can learn much from the exhibition, he must at the same time acknowledge that there is no effort shown upon the part of the photographic student and expert to invade the legitimate field of studio portraiture. The same holds good with the whole guild of amateur photographers, from the mere button-presser to the ambitious out-of-focus impressionist.

The committee in charge of this exhibition have good reason to feel gratified not only at the cordial response made by exhibitors from all quarters of the world to their invitations to exhibit, but to the grand success which has crowned their individual and collective efforts.

By the time this Journal reaches our readers the World's Fair at Chicago will no doubt be opened to visitors, and it is to be hoped that the photographic section may be of equal excellence to this forerunner at Philadelphia, yet judging from what is to be seen at the Philadelphia exhibition, no thought of fear comes into our mind but that American photographers will prove themselves equal to any in the world.

JULIUS F. SACHSE.

The world, or the people in it, consume upward of 3,000,000,000 pounds of paper yearly, which is supplied by 4,500 paper mills.

FOCUSING.

BY ELLERSLIE WALLACE.

A CONSIDERABLE portion of our photographic literature is now devoted to attempted explanations of various manipulations which can only be mastered by practice, and some of which can only be learned by seeing another person perform them.

A writer who sets himself to the work of giving directions how to perform these manual operations assumes a difficult task, and let me here say that I shall only try to give an idea of the principles upon which good focusing depends and which are unconsciously put into practice by every skillful operator. I shall not attempt to say just how it is done.

I will suppose that a person has made fair successes in his first efforts, and not done so well afterwards; sometimes, perhaps, failing entirely on subjects rather near at hand yet presenting successive reaches of distance, all of which must be rendered equally sharp. Or again, that after making good instantaneous views at the seashore with the definition sharp at the very edges of the plate, he finds it impossible to take groups of people and obtain the features of all equally distinct. Desiring to ascertain the causes of his failures and to become expert in focusing, he should proceed somewhat as follows: Having selected a subject lying in one plane, like the wall of any large building, the camera is to be set up say two or three hundred feet away from it, and the lens focused sharply on the centre-spot of the ground-glass, the stops being removed. In order to focus with ease and accuracy, the operator should *sit*, not stand, and the camera may be lowered until the ground-glass is at the level of the eye. The focusing-cloth should be of black velveteen, not less than a yard square, so that the head and the ground-glass may be perfectly covered and leave enough underneath to fold up under the chin, and prevent light from the ground from getting in and confusing the eyes. There must be no constriction around the neck; there

is no greater impediment to good focusing than a tight collar or neckband.

The camera-image being now examined it will at once be seen that while the bricks in the wall that are upon or near the centre-spot are perfectly sharp, the area of this sharp definition is very limited, and that towards the edges of the plate everything is fuzzed and indistinct. But if a point about midway between the centre and the edges be focused upon, the image will then look worse than before; the centre or principal parts being entirely out of focus, and the edges little, if any better. By now inserting a small stop and exposing a plate with both of these methods of focusing, it will be found that the latter one is superior in every way, bad as it looked to the eye. Its centre is sharp enough, as are also the margins; while the between-portions upon which the focus has been taken are, of course, perfect. The reason for this depends upon the fact that for all such subjects as lie in one plane (or nearly so) at the distance of infinity, the absolute centre of the field is too far distant from the lens to serve as a proper focal point. Or, to put it in other words: when the centre of the picture has been sharply focused and the stop afterwards inserted, the ground-glass may be pushed in considerably nearer the lens with much benefit to the marginal portions of the image, and no loss to the centre. The angle at which the rays of light forming the image converge when a small stop is used is very acute,—indeed, approximating to a straight line. The ground-glass, then, may travel to and fro for some little distance along this line without interfering with crisp definition.

But it is very important not to forget that the crispest and best definition of any lens is not to be found upon any plane surface (such as the ground-glass or the sensitive glass) but upon a hollow sphere. As it is impossible to make this clear without numerous figures, I prefer to recommend some of the well-known treatises on photographic optics for a fuller explanation. It is sufficient to bear in mind that focusing on plane surfaces is more or less of a compromise. Years ago attempts were made to substitute curved or spherical plates for photographic purposes on the plea that the definition of the lens would then be perfect.

It is hardly necessary to say that such efforts were soon abandoned. That form of panoramic camera known as Moessard's cylindrograph could not be quoted in this connection, for although the sensitive film is curved to fully a half circle, it is only the *central portions* of the lens-field that are utilized; each section of the plate in turn being impressed by these central portions, which are forced to pass through a narrow slit excluding all other light.

Where comparatively slow-working lenses have to be used with large stops, as in instantaneous work upon badly lighted subjects, skill in focusing will be very desirable. The best general rule to give is this: focus sharply upon the principal object or objects with the *face opening* of the lens, then insert the stop to be used, and again examine to see how the other parts of the picture behave. Suppose we were photographing a naval review on a dark, drizzling day, and that we knew very nearly where the vessels were to pass. We would send out a boat to the place in question, and focus upon it with the full aperture of the lens. Then stopping down the lens we would examine the margins of the picture so as to see whether such vessels as had passed the centre or not yet reached it would be sharp enough on the ground-glass with the stop used. If this were found not to be the case, we would send the boat to the right or left in the direct line of the review, so as to bring it about midway between the centre and the edges of the picture, and focus again, which would probably give the requisite distribution of sharpness. Observe that all our efforts in this case would be directed towards obtaining passable definition upon a narrow strip of the subject lying at right angles to the camera. The extreme distance and the near foreground would thus have to be neglected entirely, and if the foreground was found to be crowded with objects much out of focus, the only resource would be to trim them out of the picture. The absolute centre as well as the extreme margins of the picture might thus be a little wanting in crispness, but the general effect would be far better than if the focus had been sharply drawn upon the centre; for in this case the margins would be so much out as to necessitate trimming the picture to a smaller size.

Portraiture offers troublesome problems in focusing. The general rule given is to focus upon the features of the sitter. Now of course the features must be sharp, but in order not to create too violent a contrast between them and other portions of the picture, it will be found that this plan of *distributing* the definition gives very good results. If the full standing or sitting figure is to be photographed, the head will be far from the centre of the plate, and probably the upper buttons of the vest would be a good spot for the principal focus. The fact that portrait subjects are within the distance of infinity (*i.e.*, that point beyond which everything is sharp in the case of landscape lenses) makes focusing more troublesome. Large heads nearly or quite filling the plate are difficult; the profile is probably the least so as it approximates more nearly to a plane. While full-face or three-quarter positions will tax the powers of any lens, the best plan to follow is to select a lens with great "reach" or depth, and of long enough focus to give a large enough image while keeping well away from the sitter. Good results may then be obtained by focusing say on either temple, and stopping down afterwards, while a short-focus lens brought up to within a few feet of the sitter could never be made to give the necessary "depth," even if stopped down to pinhole size.

Groups of people are easily brought into good focus by bringing those at the outsides rather nearer the camera than the centre ones; or, in other words, making the group somewhat into the form of a half-circle with its centre farthest from the lens.

A Novel Application of Photography.—We glean from one of our foreign exchanges that in Bois-le-Duc (France) a novel use was made of photography. A local artist in making out his bills came to one account where he had mislaid the name, but had the address and negative of the person owing him the bill. So he enclosed the latter in an envelope, and pasted a photo of the debtor above the address, and thus mailed it. The result was that before the day was over the money was in his till.

LONG FOCUS LENSES IN LANDSCAPE WORK.

BY XANTHUS SMITH.

THE approaching fine days of spring will make all those who are photographically-inclined, especially towards landscape work, think of their camera, and long to be off to the country. For such as are not to be considered old hands, and for the ones that are about to make their first essay, and we hope there will be many new comers in the art of photography this spring, we will offer a few remarks about the use of that important aid in the work, the lens. We all want of course to make our work as artistic and attractive as we can, and we must, therefore, keep ourselves posted in every detail that may aid us in attaining our aim.

There are many advocates, and especially on the other side of the Atlantic, of long focus lenses for all photographic work, the impression being that the pictures taken with them will have a much better pictorial,—or, so to speak, more artistic effect than when lenses of short focal length are made use of.

There is no disputing the fact that in very many instances, lenses of as long a focal length as can well be used will make the best picture, for the reason chiefly that the forced perspective which is generally known by the term distortion in photography, is in a great measure done away with, and the objects represented relatively to themselves and to each other have more the appearance that they have in the drawings and paintings by artists, wherein due pains are taken to obviate disproportionately increased size of nearer objects or the nearer portions of the same object, and this is the chief reason, no doubt, why so many of the English photographers advocate the use of lenses of very great focal length, for we are all well aware of their artistic predilections. Some there are amongst ourselves who, after the manner of our transatlantic neighbors, are disposed to restrict themselves to long focus lenses, and sometimes even of the single-lens type.

This is all very well, and none can more fully appreciate the advantages to be gained by a long focus lens than the writer, but at the same time we should always guard against pinning our-

selves down to a certain theory; we must learn to look broadly at matters, and we will find instances arising continually wherein there are exceptions to our good rules.

Supposing an amateur, we will say, for there is no danger of professionals doing so, setting off upon a jaunt into the country to do landscape photography with a five by seven camera, and with no other than a lens of eleven or twelve inches focus, how very little work he would bring home with him, compared with one who had provided himself with an eight-inch focus lens. When we say little work, we mean in range of subject. It is true that in all those subjects which, owing to the nature of the ground and surroundings, we could not approach very near to, the man with the long focus lens would generally have greatly the advantage, but how rarely it happens that we can get a good picturesque group with clear space for fifty or a hundred yards about it, that we may command a distant point of view. We know only too well from our own experience, how often, in our enthusiasm to produce artistic work, we have restricted ourselves to a long focus lens, and returned from excursions amongst picturesque rocky and wooded-creek scenery without exposing a plate. Of course had it happened that we had fallen in with a fine group of a quarter of a mile or so from us, with clear intervening space, we would then have been fitly provided for securing it.

In these remarks we are not including seashore or marine photography. This constitutes altogether a separate branch of the art, requiring a special treatment, not only as regards the lens used, which must necessarily be almost universally of long focus, but also in the matter of timing of the exposures.

For those who intend making an extended tour amongst varied and grand scenery if it is their aim to succeed to the fullest extent photographically, it will be necessary that they be provided with at least two, and still better three, lenses, properly proportioned to the size of their outfit; thus making them fitted for the reproduction of the grand distant range, the average view, or the picturesque beauties of wood and dell.

The majority, who must restrict themselves to one lens, and whose excursions will not include the Rocky Mountains, must not feel discouraged. It so happens, fortunately enough, that a good lens of about the focal length, or a little more, of the longest way of the plate that is being used, will perform in a satisfactory manner a very great variety of work. Such combination will give us pictures in quite a considerable range, and if the subjects be well-chosen and properly proportioned to the plate, and so placed that there will neither be too much sky or too much foreground, will convey the greatest amount of satisfaction when viewing the finished work.

In using a long focus lens our foregrounds are apt in some instances to appear too far off, or rather we seem to feel the want of nearer foreground than we get, and in photographing many picturesque objects, we make a great gain by using a comparatively short focus lens, because we are compelled to go so close as to separate that which we wish to make the principal feature, from what is back of it. We have found this to be especially the case in photographing fine trees. By a near point of sight the background objects are so thrown off and diminished that they do not interfere with our great feature, and it stands out boldly, and with trees and some other picturesque objects, we do not perceive as unpleasant the distortion of perspective so much as we do in architectural subjects and in figure groups. A fine tree, which if photographed at a distance with a long focus lens would completely jumble into its background, if taken close at hand will tower above what is back of it, and stand out satisfactorily as the feature of the work.

Indeed, we are inclined to the belief that the amateur who understands to the fullest extent what may be done by a judicious use of lenses of different focal lengths in the way of aiding the artistic effect of his subjects, sometimes proportionally enlarging, and at others diminishing, advancing and receding, as the case may require, will come out much better as an artist than the one who pins himself down to the sole use of an objective which his preconceived prejudices have taught him is the sole instrument of success in art.

ON THE THEORY AND PRACTICE OF INTENSIFICATION.¹—I.

BY J. H. BALDOCK, F.C.S.

EITHER from under-development, or from the exposure not having been sufficiently prolonged (or it may be from other causes), a negative is sometimes found not to have sufficient density for printing purposes.

Due regard must, however, be had as to the final use to which the negative is going to be put; thus, for all kinds of paper printing, *e.g.*, albumen, gelatino-chloride, or platinum, a strong negative would probably yield the best result; but for enlarging, bromide work, and lantern slides, a weaker negative would possibly prove more satisfactory.

When it has been decided to resort to the intensification of a negative, certain preliminary processes are essential, *i.e.* :

1. All trace of hypo must be absolutely removed; very thorough washing, followed, if there is any doubt, by immersion in :

(a) Peroxide of hydrogen, 2 drams of the 10 vol. solution to five ounces of water. Soak for half an hour, and then wash.

(b) Alum solution, freshly made, and acidulated with hydrochloric acid (about an ounce to a pint of saturated solution of alum). The acidification is desirable, not only to assist in decomposing the hypo, but to keep the gelatine soft, as alum alone hardens the film, and renders the subsequent removal of the soluble matter difficult. Soak for half an hour, and then thoroughly wash.

(c) Iodine solution, made by dissolving iodine in a strong solution of potassium iodide till it is of a black color, adding some of this to water till of a sherry color, and immersing the plates. When a blue color is persistent, all the hypo is gone, and the plate is then rinsed, treated with sodium sulphite to remove excess of iodine, and then washed. The absence of hypo may be proved by testing the washing water from time to time either with iodide of starch, which has its blue color destroyed if hypo

¹ Read before the Croydon Micro. and Nat. Hist. Soc.

is still present, or with potassium permanganate, which has its beautiful pink color destroyed and manganese oxide precipitated by hypo.

2. Any trace of fog or veil must be carefully removed, because it must not be forgotten that any such fog or veil would be intensified too, a result not to be by any means desired. This is best removed by the careful application of a reducer, and possibly the hypo and ferricyanide of Howard Farmer is the best, care being taken to thoroughly eliminate the hypo.

3. The negative must be soaked in water for half an hour if it has become dry, because it should be thoroughly and uniformly wet to ensure success.

Thus it will be seen that a certain amount of work has to be done before intensification proper is commenced. This preliminary work is, we are afraid, often neglected; in many cases we know it is so, with the usual result that the process itself is condemned, while the real fault lies with the operator.

We will now assume that the negative is ready for the actual intensifying processes, of which we have a considerable number to choose from; and in this connection it is instructive and amusing to note how one process is strongly advocated in one text-book, while the very next book you pick up as strongly deprecates it. No wonder, then, that the mind of the beginner is as badly fogged as his plate may be.

For our present purpose we may divide these intensification processes into three divisions, *i.e.*:

1. The image is first *bleached* by the application of a certain chemical, while another chemical is employed to darken it again, producing greater density.

2. The image is darkened by the application of certain chemicals *without* previous bleaching.

3. The image, after being first bleached, is treated after the manner of an exposed but undeveloped plate. This is called intensification by redevelopment.

In the first case, in which bleaching precedes the darkening of the image, the bleaching chemical perhaps most generally employed is mercuric chloride.

We take

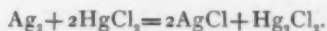
Mercuric chloride	100 gr.
Potassium bromide	100 gr.
Distilled water	10 oz.

Or

Mercuric chloride	5 parts.
Pure hydrochloric acid	1 part.
Distilled water	100 parts.

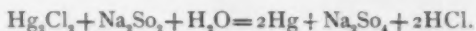
Dissolve and filter if necessary, as any undissolved particles of the mercuric salt would be liable to produce spots on the negative.

Into this solution place the negative, previously well washed (or soaked) and freed from hypo, until it is bleached right through, and appears of a white or greyish white color on both sides; it is then again thoroughly washed, and is now ready for the darkening solution. In this process the following reaction occurs:



Now there are several methods employed to darken the image. We propose to take three, and refer to them in the order of the effect they produce.

(a) If we have a fairly good negative, which is nevertheless somewhat thin and produces a flat print, we may introduce the necessary sparkle by using sodium sulphite as the darkening chemical. If the *bleached* and thoroughly *washed* negative be placed in a ten per cent. solution of sodium sulphite, acidulated with citric acid till it is darkened *through*, again washed and dried, we shall attain our end. The reaction in this case is as follows:



Should the density not be considered sufficient, the bleaching and darkening with sulphite may be done a second or even a third time.

(b) A more pronounced effect is produced by the employment of ammonia, and this chemical was very generally used, and is so still to a great extent. The *bleached* and *washed* negative is immersed in a *weak* solution of ammonia, *i.e.*, about 10 minims of

the .880 solution to one ounce of distilled water, till it is darkened right through, and then washed again, and dried. The reaction here being



the dark substance $\text{NH}_2\text{Hg}_2\text{Cl}$, being dimercurous-ammonium chloride.

(c) The third method certainly gives very decided results, but with regard to it authorities differ. For instance, Captain Abney has great faith in it; Mr. Bothamley says the only drawback is in the use of the highly poisonous potassium cyanide; Prof. Meldola does not raise any objection to it; but Mr. Chapman Jones says this formula has been proved to be unreliable, and there is no need ever to use such a process. For ourselves, all we can say is, that negatives intensified by it (carefully, of course) some five years ago, shows no sign of change. Putting differences aside for the moment, the process is as follows: The bleached and *washed* negative is immersed in a solution made thus:

No. 1.

Silver nitrate	100 gr.
Distilled water	1p oz.

No. 2.

Cyanide potassium	100 gr.
Distilled water	1 oz.

Dissolve. Add 2 to 1 gradually and with stirring, till the precipitate first formed is *nearly* but *not quite* dissolved, as it is very essential not to have any excess of the cyanide, otherwise after intensification a weakening action ensues—the same result obtaining if the negative is left too long in this solution of potassium-silver cyanide. The reaction in this case is somewhat complex, but may be as follows:



These comprise the process of mercurial intensification so far as previous bleaching is concerned.

THE SIXTH JOINT EXHIBITION.

IT is extremely difficult to single out any special exhibits in the galleries of the Academy of Fine Arts, so universally excellent are they in general. For a full list we must refer our readers to the official catalogue. For the official opinion of the judges, to the list of awards published in full elsewhere in the present JOURNAL.

A peculiarity of the exhibition was the legend on the English pictures, setting forth that they were "For Sale." So universal was this feature, that visitors could almost tell the nationality of the exhibit without referring to the catalogue. A notable exception was the contribution by Paul Lange, of Liverpool, England, ex-president Liverpool Amateur Photo Association, who sent three exquisite prints of Scandinavian subjects, which bear the legend, "Not for Sale or Competition."

With one or two minor exceptions the commercial feature was entirely absent in the exhibits by the three joint societies.

Among the noticeable specimens which attracted attention were the large and pretentious platinum prints of R. H. Lord, of Cambridge, England. Equally fine and prominent were the views of the U. S. Cruiser "Newark," the U. S. Capitol, and the Dunes at Barnegat, by Wm. H. Rau, of Philadelphia. W. J. Auckorn, of Arbroath, Scotland, shows some fine studies and compositions.

Fred Thurston, of Luton, England, is represented by some fine carbon prints. Adam Diston, of Fife, is particularly happy in his "Rehearsal" on Matt Surface Paper. John Henry Avery brings out the possibilities of cold bath platinum on ten fine prints, the only detrimental feature being the inevitable placard, "For Sale."

W. P. Marsh, Bognor, England, brings before the American public a series of artistic sea studies, some of which are enlarged in carbon prints. George Bankart, Leicester, England, is represented on the walls with a dozen small gems in carbon, the sub-

jects being English, Irish, and Scotch landscapes and figure studies.

One of the features of the exhibition is a view of "Mount Blanc," taken from Bellevue. The print is on celloidine paper by Fred Boissonnas, Geneva, Switzerland. This a true telephotograph, the distance between the two points being forty-four miles.

The series of silver prints sent by Sharpoor N. Bhedwar, Bombay, India, prove an attraction to all visitors, and are never without a crowd of admirers, the honors between the two sets, "The Feast of Roses" and "The Naver Ceremony," being equally divided. Henry Troth is represented by a series of small views in platinotype, Ilford, and ferro-prussiate. M. C. Morris shows two grand bromide enlargements. S. M. Fox shows some exquisite platinotypes of Italian ruins. In Caspar W. Miller's collection "A Cloister Garden" and "End of Old Church" are especially fine. All of the four latter exhibitions are of the home society.

No. 163, "Where Flowers Bloom," a carbon by W. Clement Williams, of Halifax, England, is a favorite subject with visitors. W. S. Clow shows a pleasing series of pictures representing rural life. John G. Bullock is represented by some of his characteristic compositions. Charles T. Goodwin shows four fine prints from negatives innocent of any retouching. The last three of home society.

Albert B. Parvin, of Philadelphia, specimens of photo-telephotography, made with his new lens: distance from camera to subject from 9,000 to 14,000 feet.

Any account of the exhibition would be incomplete without mention of the fine carbon enlargements and cloud studies by Birt Acres, Barnet, England. The only drawback to this meritorious and beautiful work is the placard "For Sale." Thirty dollars is the price asked for the carbon enlargement in green pigment.

E. Obernetter, Munich, Germany, shows ten landscapes on Obernetter Mignon paper, a set of gems which should be studied by all landscape artists and amateur photographers who visit the

exhibition. Karl Greger, London, England, sends eight prints on gelatine chloride paper, toned with platinum, which are equal to steel engravings. W. W. Winter, Derby, England, sends some fine portraits 24x18, direct prints in cold platinum.

No. 99, a large carbon print, the "Mohawk," winning first prize at Southampton regatta. Photograph from a small sailing boat, by A. J. West, South Sea, England. This can be bought for the trivial sum of £6, or \$30.00 cash; the frame not included.

Ralph W. Robinson, Surrey, England, sends a fine lot of prints, all marked for sale.

One of the largest exhibits is the series of fine platinotypes by Miss Catherine Weed Barnes, forming a part of the result of her trip to Europe last summer. The prints are handsomely mounted in frames of ivory-white and silver.

Perhaps the most striking subjects in the whole exhibition are to be found in the set by John E. Dumont, of Rochester, N. Y. The subject, an old monk, is pretty well known by this time; the beautiful tones of the prints, however, gave the old faces a new and fresh appearance, and made the group a point of attraction.

The work sent from Japan shows that photography is already well understood in that country. There are more than two dozen pictures shown, among them the work of two native artists, K. Ogawa and Sebe Kajima, of Tokio, who do really excellent work. That of Mr. Ogawa is particularly fine, and among his collection are three pictures in chromo collotype.

W. A. Cooper, of Chicago, shows a case of eighteen platinotypes, all copies of oil paintings. It is the only exhibit of this extremely difficult and important branch of photography, and has not received the attention from either judges or general public which it deserves. Adjoining the above is the exhibit of D. F. Fairchild, Leavenworth, Kansas. It consists of twenty-four platinum prints, and is acknowledged by almost all unprejudiced persons as one of the finest collective exhibits in the galleries. Mr. Hallock, of the home society, shows nine meritorious prints. William Archibald, of the Newark Club, shows a frame of lightning flashes.

The collective exhibit from the Argentine Republic, South America, shows good work and characteristic subjects. The same applies to Charles St. J. McKee, of Germantown.

Alfred J. Simpson, of the New York Club, covers considerable wall space to good advantage, proving himself a conscientious worker of highest order. Alfred Stieglitz, of the same club, is represented by twenty-one prints, several of which have been singled out for their originality and excellence of technique and choice of subject.

James L. Dillon, of Philadelphia, shows two frames of albumen prints, of horses and dogs,—both difficult subjects. They are well handled and universally admired.

Edmund Stirling, of the Philadelphia Society, shows some fine platinotypes; the first, "Studies on the Wissahickon," showing nooks and bits on that romantic stream, where every rock has its legend, every tree its history, and every old house its spook story; the other collection, "Niagara in Winter," showing America's greatest wonder in the grasp of the frost king. The scenes and views are well chosen, correctly timed and artistically reproduced.

James F. Wood, of Philadelphia, shows a number of hospital studies of special interest to the medical fraternity.

H. A. Latimer, Boston, shows a fine collection of prints made by various processes, and which are a credit to the Boston Club. Herman Parker, of the same club, shows a fine effect of fire ruins. Francis Blake, of Boston, exhibits a series of instantaneous pictures of tennis service, all made with a "focal plane" shutter. The exposure of these is stated to have been one two-thousandth part of a second.

Miss Sarah J. Eddie, of above club, sends eighteen prints; excellent in technique, showing correct timing and good judgment. O. A. Eames and M. F. Whitow, of Boston, also make creditable displays.

H. Parker Rolfe, of Philadelphia, shows a collection of blitz-pulver effects grouped in one frame. In flash-light work they are without an equal in the exhibition. S. T. Hazzard, of Philadelphia, has a fine collection of California views. Mr. S. H.

Chapman, also of Philadelphia, shows a number of foreign and domestic pictures, all a credit to the home society.

The unique exhibit of George Davidson, Hon. Sec. of the Camera Club, London, well illustrates what may be called the extreme modern school of photography, called by courtesy "art photography." A writer, commenting on this instalment, states, "In illustration of the serious manner in which Mr. Davidson has taken up photography as a means of art expression, it may be mentioned that it is his custom to produce but one good print from a negative, so that each of his pictures is as unique in its way as a painting produced by an artist in color. Speaking of photographic processes, he says 'he does not care whether a thing is an enlarged or direct print, made with a "pin-hole" or lens, so long as it is a *picture*.' Many of the examples contributed by Mr. Davidson are made *without a lens*, the light entering the camera simply through a very small opening made with a pin in a piece of cardboard. As pictures these specimens are unexcelled by any in the exhibition. Mr. Davison's pictures are sent as a special loan collection, and are not entered in competition."

In a corner of the east room, away from the finest and most pretentious specimens of modern photography, which fill the visitor with admiration and wonder at the great progress made in latter years, may be seen a set of plain oak frames, five in number, 11x14 inches, loaned for the exhibition. The photographs in the frames are small, and devoid of artistic beauty or pretensions to technique or execution, yet they are not without interest to the intelligent visitor, be he photographer or of the general public, as may be judged by the legend on each frame, viz.:

1. Fac-simile of the first heliograph made in America by Joseph Saxton, Philadelphia, October, 1839.
2. Fac-simile of the first portrait made in the world of a human face, Robert Cornelius, Philadelphia, November, 1839.
3. Portrait of Dr. Paul Beck Goddard, 1840, who perfected Daguerre's process by first use of bromine, Philadelphia, December, 1839.

4. Fac-simile of first instantaneous view entered for competition, Philadelphia, October, 1840.

5. Fac-simile of first interior taken of a public event. Franklin Institute Exhibition, Philadelphia, October, 1842, by Dr. Goddard,—all being copies from the originals by Mr. Julius F. Sachse, of Philadelphia.

The series not alone shows the genesis of photography and the progress of half a century, but proves the fact that to Philadelphia's scientists and experimenters is due the perfection and development of photography, until finally the art has reached the elevated pinnacle which it now occupies as is shown by the sixth joint exhibition.

THE CATALOGUE OF THE EXHIBITION.

ADAINTILY gotten-up quarto of 113 pages, with six illustrations, five phototypes, and one photogravure. The volume is well-gotten up, and reflects great credit upon the veteran journalists on the committee on whose shoulders rested the task of making up the catalogue. The book, as stated in the preface, is intended to be something more than a mere finding list of the pictures hung upon the walls. As a matter of fact, it will form a permanent record of the achievements of those who to-day, in various parts of the world, are striving to apply to the highest uses the great art and science of photography.

The little volume will without doubt be kept by many of the casual visitors as a dainty souvenir of a pleasant visit to the exhibition. To the photographic student it will form a valuable addition upon the book-shelf, for reference and comparison in the future.

THE AWARDS.

THE Board of Judges, appointed by the Exhibition Committee of the Photographic Society of Philadelphia to award silver medals for the best exhibits of artistic, technical, and scientific photography shown at the sixth annual exhibition, held under agreement between the Photographic Society of Philadelphia, the Society of Amateur Photographers of New York, and the Boston Camera Club, respectfully report that they have carefully examined all the exhibits, and have made the following awards:

George Bankart, Leicester, England—No. 52, In the Trosachs; No. 57, Cottage at Welford, Gloucestershire; L. S. No. 2, Lantern Slides, Cottage Subjects.

Francis Blake, Auburndale, Mass.—Nos. 42, 43, 44, Instantaneous Studies.

Winfield S. Clow, Philadelphia—No. 23, Making Apple Butter; No. 26, Solid Comfort; No. 30, Struck it Rich.

John E. Dumont, Rochester, N. Y.—No. 1058 A, Hard Luck; No. 1058 B, The Solo; No. 1061, The Connoisseur.

A. Eickmeyer, Jr., Yonkers, N. Y.—No. 733, Gathering Lilies; No. 737, Mistress Dorothy.

Miss Emma Justine Farnsworth, Albany, N. Y.—No. 918, Orpheus; No. 919, Ode 34, Anacreon; No. 922, Friends.

John H. Gear, London, England—L. S., No. 48, Lantern Slides.

William Gill, Colchester, England—No. 1017, Portrait; No. 1020, "Kittie;" No. 1028, "Kittie."

Karl Greger, London, England—No. 193, Sunset on the Lower Thames; No. 194, In the Welsh Mountains; No. 196, Home from Ploughing.

Edgar G. Lee, Newcastle-on-Tyne, England—L. S., No. 12, Lantern Slides.

R. H. Lord, Cambridge, England—No. 176, Try Again; No. 177, Work and Play; No. 178, How's That?

W. P. Marsh, Bognor, England—No. 393, After a Sou'wester; No. 394, "What are the Wild Waves Saying?"

Charles L. Mitchell, M.D., Philadelphia—No. 347, On the Banks, Durham; No. 370, A Fisherman's Home, Clovelly; L. S., No. 40, Lantern Slides—Swiss Views.

Clarence B. Moore, Philadelphia—No. 3, The Coming Race; No. 6, Gimme a Light; No. 13, Tickled to Death.

George M. Morgan, Boston, Mass.—No. 792, Portrait Study; No. 793, Portrait Study.

E. Obernetter, Munich, Germany—Nos. 933, 937, 938, Landscapes.

Charles R. Pancoast, Philadelphia—No. 375, Evening on Montauk; No. 376, Near Waterville, Conn.; No. 377, An Afternoon in the Berkshires.

Robert S. Redfield, Philadelphia—No. 848, Study of Sheep; No. 849, Navigation; No. 850, Landscape with Cattle.

Charles Reid, Wishaw, Scotland—No. 231 E, No. 231 F, No. 232 G, Studies of Animals.

Ralph W. Robinson, Surrey, England—No. 269, "It Was a Lover and his Lass;" No. 271, "A Primrose by the River's Brim;" No. 272, Dying Day.

Alfred Stieglitz, New York—No. 513, The Card Player; No. 514, A Nook in Pallanza; No. 523, At the Brook.

Frederick Thurston, Luton, Bedfordshire, England—No. 198, Our Village; No. 206, Changing Pasture.

F. B. Warner, Philadelphia—No. 1031 D, Fountain of the "Fall of Waters," Mexico; No. 1031 F, Entrance to Mexican Country Grave Yard; No. 1032 G, Canal Street, New Orleans, Louisiana.

G. West & Son, Southsea, England—L. S., No. 3, Lantern Slides, Yacht Racing Scenes.

W. Clement Williams, Halifax, England—No. 160, Marine Study; No. 163, Where Flowers Bloom.

W. W. Winter, Derby, England—No. 290, The Student Fair; No. 291, Comparing Notes.

James B. Sword, Thomas Hovenden, George W. Hewitt, Robert W. Vonnoh, John C. Browne, Board of Judges.

CLUB TYPES.

THE study of human nature, in its varying phases and under varying conditions, is ever an interesting subject ; its limits are boundless, and its provision for research will not be exhausted until the end of the world. No better opportunity for considering individual characteristics can be found than personal contact with a body of people banded together for some common object or purpose. Each separate human unit possesses peculiarities, some strongly pronounced, others barely distinguishable, yet still existing, closer acquaintance and time only being required to bring these idiosyncrasies into observation. In a photographic club, or society, for instance, an almost kaleidoscopic collection of individual peculiarities is to be met with. It may, therefore, not be inappropriate on the present occasion to briefly recall to the memory of the reader some of the many types he invariably comes into contact with at the various functions connected with his own particular club or society.

The first type that we shall consider is the *Pot Hunter*. This is a very important specimen, yet, notwithstanding the prohibitive nature of his composition, is not uncommon. He is, of course, one of the club's best workers, and as a rule he has an excellent opinion of his own skill and powers, and is admired and envied by his fellow-clubmen. Their love of him, however, increases tenfold when he does not pit his talent against theirs, but confines his penchant for medals to the open classes only. He is generally a very good-natured sort of fellow, being always ready to give advice to novices. Should he fail to score at any exhibition he always knows the reason why, and can furnish an unanswerable excuse. He has a mysterious instinct for discovering future exhibitions. He is well versed in everything connected therewith, scatters his work broadcast over the land, often exhibiting at the same time in two or three towns situated far away from each other. At the club he is *the* authority on all matters relating to the making of a picture, and his assistance is invoked to elucidate any technical difficulty that may arise.

The *Investigator* delights to dabble with the latest invention, no matter to what branch of the art it may appertain. No sooner does the announcement appear that a new developer or a new brand of plates is on the market than off he rushes to the nearest dealer and orders samples to experiment with. The result is duly reported to the members of the society, many of whom never dream of venturing to adopt anything new until they have received the *Investigator's* opinion, in which they have as much confidence as a solicitor has in the opinion of counsel. He has always got the latest thing in shutters, and will expatiate for hours on the last improvements in cameras and lenses. His heart beats quicker, his eye kindles, he is filled with joy when the first intelligence of a new invention is brought to him, and in a very short space of time he knows and can tell you all about it.

The *Faddist* is a peculiar individual with peculiar fancies. He *must* have this sort of camera, it is imperatively necessary that he should have that kind of lens and So-and-So's plates. He affects to despise the work of every maker, except the favored one that he patronizes. Wherever he goes he carries with him an exposure book, upon which he places as much reliance as a hermit in his Bible. He religiously follows in the paths of his forefathers, and never diverges a hair's breadth; does not like new-fangled things, and will not at any price try a new developer. "No! my boy," says he, "they may try till they become bald-headed, but they will never beat pyro!" In his dark-room he is most methodical. His developing dish must always be placed here, his hypo there; his various bottles have each a distinct place, and they must not be disarranged, under penalty of death. Even his focusing cloth must be folded in a certain manner, and his lenses when out of use must always be replaced in their swaddling clothes of chamois leather. He has nearly a hundred different accessories over and above an ordinary outfit, every one of which he solemnly assures you on inquiry is requisite and necessary for the successful carrying out of his photo.

The *Everlasting Interrogator* is sometimes apt to become a nuisance. He is of such an inquiring turn of mind, does really so much want to know the minutæ of this system, and every

possible detail connected with that system, that he often bores a lecturer who is addressing the meeting, and sometimes totally crushes him beneath the pyramid of queries he hurls at him. His questions are generally more or less applicable to the subject under discussion; but so great is his love for interrogating that he sometimes forgets himself and asks an imbecile question. It is then that the bored lecturer's opportunity for revenge arrives, and he is sarcastic at his tormentor's expense.

The *Base Imitator* (poor fellow) lacks mental capacity; he possesses nothing original (except himself), could not evolve an idea of his own to save his life, only managing to exist and fill a place in the ranks of mankind by closely following the example—good or bad—of others. If he is out on a tour with a friend, he only takes those very views that his friend takes, from the self-same spot and under precisely similar conditions. He will not expose one plate more or one plate less than his companion; and whatever his ideal or "pattern" for the time being does, that doth he also with soulless exactness.

No matter how well constituted a society may be, a *General Grumbler* is sure to exist to render the lives of the committees a burden unto them. With whatever is done for the benefit and welfare of the club he always has some fault to find. If only his advice had been taken, this and that would not have happened. He dearly loves to have a finger in every pie, and he usually manages to gratify his wishes in this direction. Whenever he unearths a new grievance he will recount it into the ear of anyone he can lay hold of; he is never happy unless he is unburdening himself and confiding in someone, who, by the way, is only too glad to escape as soon as possible.

Sometimes a club is unfortunate enough to possess a *Punster*, who evidently is wasting valuable time, and should be utilizing his talent on the staff of *Ally Sloper* or a similar periodical. The "jokes" (?) that the long-suffering members have to endure, the feeble harpings on words they have to listen to, oftentimes make them thirst for the blood of the miscreant. It is a wonder he is allowed to live.

The *Ordinary Individual*, in whom there are no strongly marked characteristics, predominates of course in every society, and it is to these that it has to look for its backbone and its support. There are various other human curiosities unmentioned in this article existing at the present time in different societies, but the reader will be able to find these himself without much trouble, and when he has done so, and has considered their peculiarities and eccentricities, he will certainly be greatly amused if not edified.—*The Amateur Photographer*.

PHOTO-DYEING.

THIS is a process on the experiments of Kopp, the sensitive salt being bichromate of ammonia, to which is added metavanadate of ammonia.

Bichromate of ammonia	50 grammes.
Metavanadate of ammonia	5 grammes.
Water	1000 c.c.

After immersion it is dried at a temperature of 25° to 30° C., and is then ready for exposure. It is exposed under a negative until the details appear clearly defined, then thoroughly washed to remove all traces of the unaltered salts, and may then be either dried and put away to be dyed at some future time, or placed at once in the dyeing bath. Before dyeing it should be steeped in warm water.

Numerous coloring matters can be used (artificial alizarin, anthracene blue, alizarin green, yellow, orange, maroon, etc.) The prints are placed in a boiling solution of the dye for from ten to fifteen minutes, and are then taken out and washed; if the whites are then not pure the print is passed through a warm bath of carbonate of soda, or a cold bath of chloride of lime, to which a few drops of hydrochloric acid have been added. After a thorough wash the print is finished, and is said to offer great resistance to the action of light, alkalis and acid.

—*L'Amateur Photographic*.

ELEMENTARY OPTICS.

(Continued from page 186.)

A ray of light is always more or less refracted or bent, depending on the density of the medium or substance through which it passes. The refractive power of some substances is immense, while that of others is very trifling, as the following table of some of the most important will show :

Air - - -	1.000294	Plate glass - -	1.542
Water - - -	1.336	Flint glass - -	1.830
Alcohol - - -	1.372	Do. containing much	
Oil of cloves	1.535	lead - - -	2.028
Crown glass - -	1.534	Diamond - - -	2.439

A ray of light passing through a vacuum, progresses in a perfectly straight line, and were it possible, under such conditions, to look at a brilliantly illuminated point, we should see it in its true position, viz., the numerous rays coming undisturbed directly to the eye. But all matter, however attenuated it may be, has the property of refracting or bending the ray of light; consequently we do not see the stars in their true position, owing to the refractive power of the atmosphere.



FIG. 6.

The law of refraction can be easily and decidedly demonstrated thus—take a basin, in the bottom of which place half-a-dollar, or any other small bright substance, and removing a sufficient distance from it to lose sight of the coin, it will appear as in Fig. 6; A representing half-a-dollar, and B the eye of the observer. The half-a-dollar, of course, is invisible. Then request some person to pour water into the basin, taking care to keep your eye fixed on the same spot during the operation. The coin begins to appear, and gradually becomes more visible until it comes

entirely into view. The fact is owing to the ray of sight (or light) being refracted, or beaten back, as in Fig. 7; C representing the water, and B A the ray of light refracted.

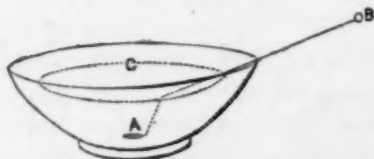


FIG. 7.

The explanation of this phenomenon is, that the ray of light producing vision in the eye is bent, on emerging from the water, and has all the effect of conveying our sight round a corner.

The refractive power of water is also observable when we thrust a straight stick or instrument into it, on aiming at any object. We see that the stick seems to be bent, and fails in reaching the point which we desired it should reach. On this account, the aim by a person not directly over a fish, must be made at a point apparently below it, otherwise the weapon will miss by flying too high. Persons who spear salmon in rivers require to calculate upon this refractive power in taking their aim.

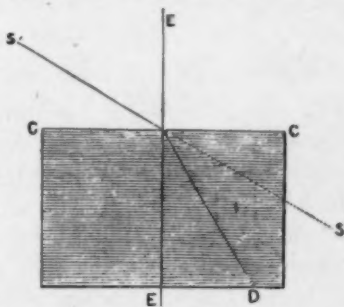
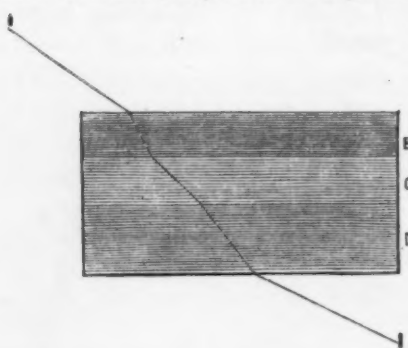


FIG. 8.

Another illustration of refraction is to allow a sunbeam *S* (Fig. 8), passing through a hole in the window-shutter of a dark room, to fall upon the surface of a fluid contained in a glass vessel, *C C*; instead of proceeding onward to *S*, it will be found to alter its course at the surface of the fluid, and pass along the line to *D*. Every substance has different refractive powers in virtue of its physical constitution; but a ray of light incident perpendicularly on a refracting medium, as the ray *E* (Fig. 8), suffers no refraction.

Again, if we float, one upon the other, fluids, *B, C, E*, having different powers of refraction, we shall then see the relative phenomena exhibited by the bending of the ray *L B*, as it passes through these different media, as represented in Fig. 9.

The mode of the refraction depends on the comparative density or rarity of the respective media. If the medium which the rays enter be denser, they move through it in a direction nearer to the



perpendicular drawn to its surface. On the contrary, when light passes out of a denser into a rarer medium, it moves in a direction farther from the perpendicular. This refraction is greater or less—that is, the rays are more or less bent, or turned aside from their course—as the second

FIG. 9.

medium through which they pass is more or less dense than the first. To prove this in a satisfactory manner, and at the risk of repetition, we make the following experiment: Take an upright empty vessel into a darkened room, which admits but a single beam of light obliquely through a hole in a window-shutter. Let the empty vessel stand on the floor, a few feet in advance of the window which admits the light, and let it be so arranged that, as the beam of light descends towards the floor, it just passes over the top of the side of the vessel next the window, and strikes the bottom on the side farthest from the window. Let the spot where it falls be marked. Now, on filling the vessel with water, the ray, instead of striking the original spot, will fall considerably nearer the side towards the window. And if we add a quantity of salt to the vessel of water; so as to form a dense solution, the point where the ray strikes the bottom will move still nearer to the window. In like manner, if we draw off the salt water, and supply its place with alcohol, the beam of light will be still more highly refracted; and oil will refract yet more than alcohol.

Our next care is to study the practical application of these laws of refraction to the manufacture of "lenses." By lens is meant what is commonly called a magnifying glass, which may be composed of any transparent substance; but in its application to

photography it is generally made of glass as pure and colorless as can be procured; therefore we shall consider that a lens is a glass ground into such a form as to collect or disperse the rays of light which pass through it. These are of different shapes, and thence receive different names. The following figures individually represent sections of the variously-shaped lenses and other glasses used in optics. A is a triangular stalk of pure



FIG. 10.

glass, of which we have here a cross sectional or end view, and which is called a prism. Each side of the prism is smooth. B is a section of a piece of plane glass, with sides parallel to each other. C is a sphere or ball of glass, and consequently is convex on all parts of its surface. D is a piece of glass convex or bulging on its two sides, and is called a double convex lens. It is the kind of lens which is used for magnifying objects, in spectacles, telescopes, and other instruments. E is a plano-convex lens, flat on one side and convex on the other. F is a double concave lens, or glass hollowed on each side. G is a plano-concave lens, or planed on one side and concave on the other. H is a meniscus, or lens convex on one side and concave on the other, both surfaces meeting, and of which we have an example in watch-glasses. I is an example of the concave-convex lens, in which the surfaces disagree, or do not meet when continued. In all these lenses an imaginary line, represented by M N, and passing through the centres of the surfaces, is called the axis. Thus, the line said to pass through the centre of any lens, in a direction perpendicular to its surface, is called its axis.

The design in forming lenses is to procure a medium through which the rays of light from any object may pass, and converge to a corresponding point beyond. The manner in which the rays proceed through the glass, and then centre in a focal point, will depend on the form of the lens, its capacity for refraction, and the distance of the object.

(To be continued.)

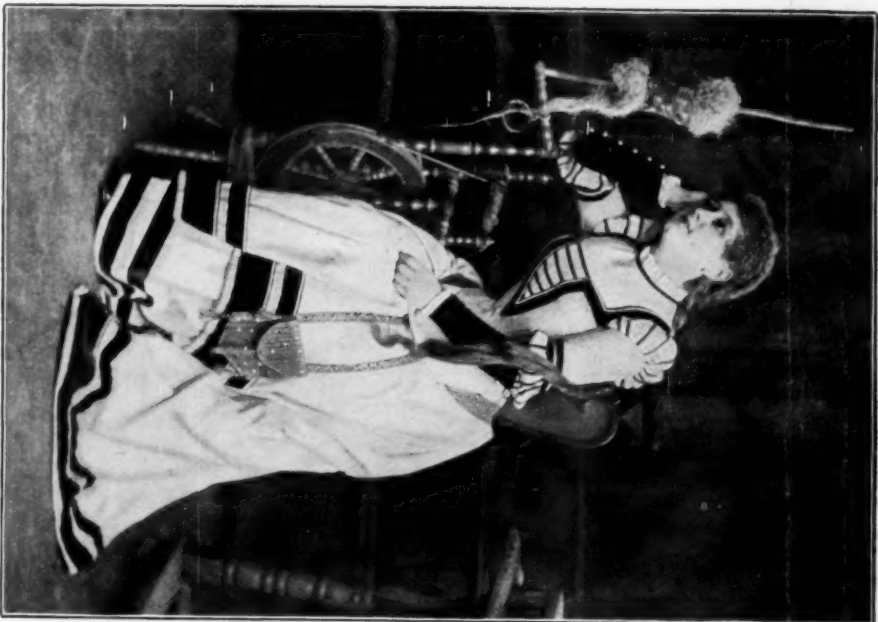
VARIETY, INDIVIDUALITY, AND INVENTION.

BY DR. EDWARD L. WILSON.

TO those who think slowly, and who understand even more slowly, a few examples of attractive posing may serve a better purpose than a considerable laying down of the rules of composition.

I have chosen for this paper, then, eight good pictures which, I trust, may go a great way toward supplying what I want to say upon the subject of variety and invention. The one thing which makes the work of one photographer more attractive than another is variety of attitudes. They show up his individuality, and, like variety in any other department of the world's work, they add spice to his business. Burnet has truly said that "the real trouble in life, in all professions, is the trouble of thinking, to escape which the most laborious trifling is caught at; but if fairly grappled with in the outset, everything becomes clear; and, in after-life, that which is a continual annoyance to many becomes one of the greatest gratifications." The first statement is a pathetic truism in the case of many photographers. I have been in their studios when my heart has fairly pitied the occupants because their specimens on the walls gave evidence all too plain that their inventive powers were confined to about half a dozen stereotype positions, which were tried upon all comers, old and young, male and female, alike.

When the mind has become educated in continual intercourse with the eye, followed by the habit of reflecting upon cause and effect, then it is easy for the operator to see clearly at the first contact with his subject what way is best to place him before the camera. The ease with which exposures may be made when using dry plates has done much toward increasing the fertility of some photographers, but their products are not worthy of art—they are as wild as the incantations of a witch, and are no more worthy of being called artistic than the cries of the Delphi are worthy to be classed as music. May I not hope to help some of these blundering ones to better habits? We want variety, but we also want attention to individual characteristics. We want to



LESCHER & PETSCH,

"MARTHA"

PHOTO-TONE PLATE BY PHOTO-ENGRAVING CO., 67-71 PARK PLACE, NEW YORK.

BERLIN.



J. M. BRANERO,

SOLLOQUY.

MADE WITH A NO. 4 "EURESCOPE" LENS ON A GRAMER DRY PLATE.

ROME, N. Y.

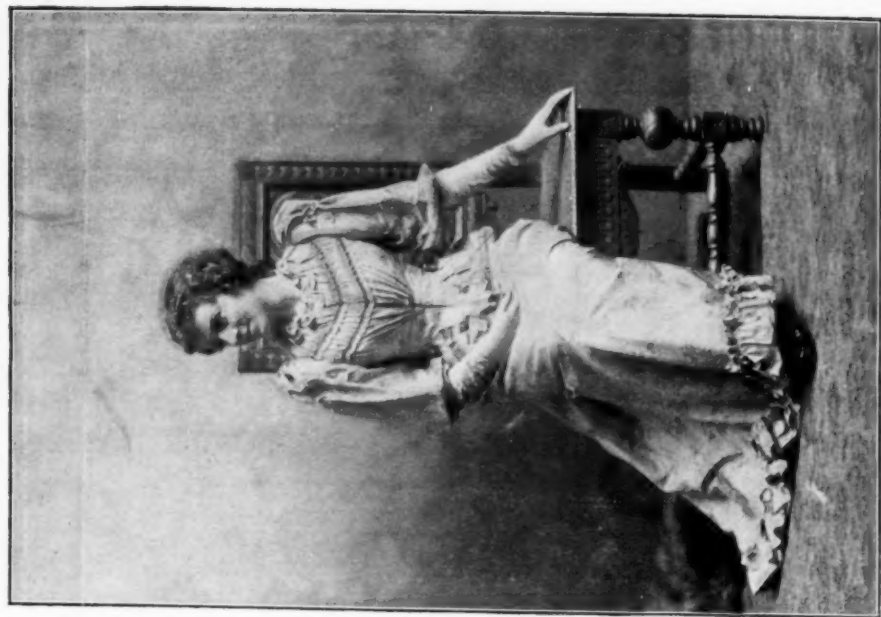


J. LANDY,

CINCINNATI, OHIO.

IN DEEP THOUGHT.

MADE WITH A VOIGTLANDER LENS ON A CRAMER DRY PLATE.



W. G. C. KIMBALL,

CONCORD, N. H.

AN EASY POSE.

MADE WITH A 3-A DALLMEYER LENS ON M. A. SEED DRY PLATE.



E. MEULE,

MADAME ALIDA KLEIN.

ROTTERDAM.



LESCHER & PETICH,

LADY WITH FLOWERS.

BERLIN.

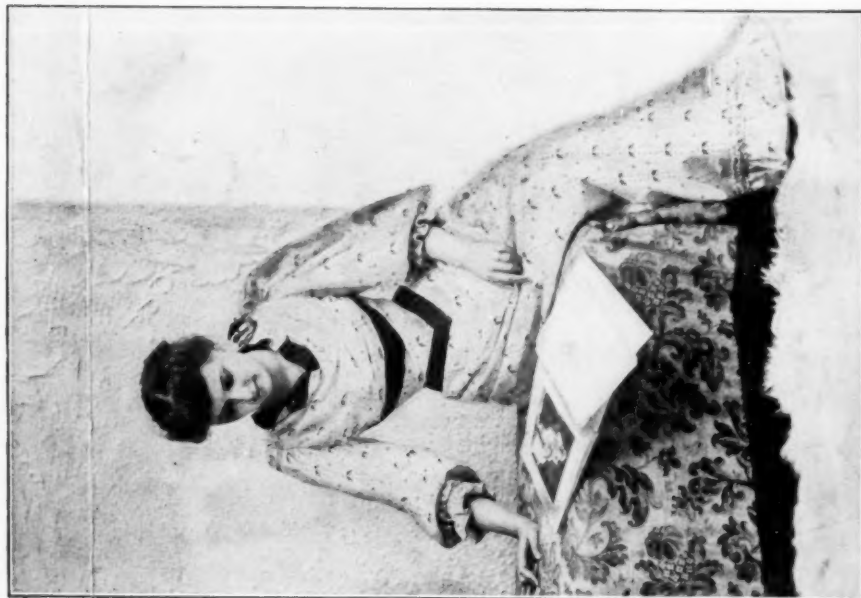


FRANK THOMAS,

COLUMBUS, MO.

FIGURE STUDY.

MADE WITH A 3-8 DALLMEYER LENS ON A HAMMER AND ALTHANS DRY PLATE.



C. S. BATEMAN,

NORWALK, OHIO.

"READING."

MADE ON A GRAMER "CROWN" PLATE WITH A "PEERLESS" LENS.

express our individuality, but we must also exercise our invention by catching the momentary expressions of grace, feeling, beauty, attitude, and so on, so easily caught now by the rapidity of exposure available. Do not let quick exposures, however, cause you to pose your model too quickly, too carelessly. Bear this in mind, however, once each day, twice every day, and *always* when you make a picture, namely: That neither the faculty of seeing, nor the exercise of taste, nor any positive individuality in your work, can be attained without thought and application. For not until these are practised will you feel, and without feeling you cannot be a true artist. The highest art is felt, rather than seen or heard. That is what makes it so hard for one to write about it. Burnet has taught us all much, and in Wilson's *Photographics* and *Quarter Century in Photography* you are humbly led to follow him. In the last, too, many artistic photographers give us their experience to help. Let us try some of this discipline together now, by referring to the studies which follow. Should these eight ladies visit any of our studios some bright day, with all their grace and beauty, they would also bring their share of drawbacks—their modicum of snags against which we may expect to stumble if we do not think and act with judgment, taste, and care. Some such mental process as this must be experienced, then. The lady from Loescher & Petsch, though a very tall person, has her own idea of attitude. She "must be taken standing," for she "wants the flowers to show." Not to make her appear *too* tall, we must haul in the old-time column, and bend her angular person somewhat by causing her to lean against it. We get a good disposition of her hands in that way, too. What a pity she didn't bring a wreath to hold—or a bouquet—in the left hand. The lady from Mr. Brainerd has a nice figure and a good profile, but she "doesn't want to sit"—wants "more of the figure." She has consented to a compromise, and appears very well. Our knowledge of Shakespeare helps us out when Mr. Thomas sends his friend, for she has a good profile, can sit well without any help, and we give her a "soliloquy" pose. If her nose had been puggy, how we should have been bluffed. We could not, without risking a valuable

life, attempt such an attitude for Mr. Bateman's subject, for—well, never mind—for the attitude he has chosen—a capital one—suits her better. Grace is added to the graceful. You have noticed that good lines and good lighting characterize all of these studies, so far. Mr. Kimball favors us with a very nice example of attitudinizing—so easy, so graceful, so natural, and in every way so worthy of following. What a change from the old dispensation, when the proper thing was to seat the fair ones with the chair equally balanced on either side, the hands in the lap, and shoulders and face square to the camera! A lady in costume, such as is supplied by Mr. Landy's excellent picture, must have more care given to the composition of the picture; again, accessories are to be introduced, with care and judgment, for the purposes of massing the light and shade.

Madame Alida Klein, a Holland lady, has assumed an attitude which comports with her figure, her accordion-pleated skirt, and with the time when thin dresses are seasonable and comfortable. The exterior lines of this picture, and the disposition of the hands, are especially commendable. When the subject presented is in character dress, then, of course, we are constrained to bend to that fact. "Martha," from the famed Berlin studio of Loescher & Petsch, affords us a good study, and gives us a variety. The attitude, clipped of the character element and of the spinning-wheel accessory, is a good one for many subjects, using a chair or table instead of a wheel, and is well worthy of study.

Now, I have illustrated what I mean by "variety" and "invention." The "individuality" is for you to work out. I have not tried to demonstrate *all* the good points in these capital studies. This paper does not afford enough space for that. There are more rules given in other pages by which you may measure them, if it is in your mind to do it—if you have the "feeling."—*Mosaics.*

Book Illustrations.—Ordinary half-tones, routed and vignetted, are coming into favor more and more with the French publishers.

The Editorial Dropshutter.

The Awards.—It would be of great interest to the majority of exhibitors at the late sixth joint exhibition, if the judges of awards would inform them as to their standard of excellence upon which they based their conclusions, as in several cases the question arises why an award was made at all, while so many apparently far superior exhibits were passed by without notice.

Ives from a German Standpoint.—*The Photographische Nachrichten*, for March 30th, 1893, in commenting on the paper on Composite Heliochromy by Frederick E. Ives, published in the February JOURNAL, thus delivers itself.

"The modesty of Ives, who has supplemented the claims of the other investigators [Vidal & Vogel.—Ed.] by footnotes of his own, is so great that he assumes authority in a jurisdiction which he, so far as is known, has never entered upon. There certainly is a difference between a person who uses a triplicate system of orthochromatic exposures to produce a lantern picture, and those who strive to produce real pictures by photo-mechanical means in the truest colors of nature."

The intimation that Mr. Ives has never entered the fold of photo-mechanics will no doubt be news on this side of the water, especially as our townsman is now in Europe, it is rumored for the express purpose of introducing the identical photo-mechanical half-tone process which is known by his name.

The Largest Bromide.—A bromide enlargement 8 feet 4 inches long by 4 feet 6 inches wide has just been completed in England. It will form part of a photographer's exhibit at Chicago. This is said to be the largest photograph ever made on a single sheet of paper.

Carbon Print.—The Autotype Company of London expect to send to the Chicago fair the largest carbon print ever made.

A couple at the first lantern evening during the Joint Exhibition slept during the whole evening, seeing not more than about ten out of the hundred slides shown.

A Cute Picture.—Mr. C. F. Roth, the leading photographer of Catasauqua, Pa., has taken a cute picture of his little daughter, "Miss Tillie." The child's face appears through a torn newspaper, and makes an attractive portrait.

Ethnological Photography.—The British Museum authorities have lately received some eight volumes of photographic studies of the diminutive aborigines of the Andaman Islands. The studies are of great ethnographic interest, for the Andamense are now few in number and rapidly disappearing. Another forty volumes will follow before Mr. Portman's task is completed: he considers it will take him quite five years to finish the studies. The Andamans were annexed by the British in 1851, and are now used as a convict settlement for India; the convicts are five times as numerous as the aborigines. It was at Port Blair, in the Andamans, it may be remembered, that the Earl of Mayo, the then Viceroy of India, was assassinated by a convict twenty years ago.

A most interesting exhibit has been arranged at the press club fair in New York by a special committee on photography. A wall space nearly two hundred feet in length on the floor where the educational exhibit will be placed has been selected, and will be covered with the finest and most varied collection of the work of amateur photographers that has ever been brought together in this country. The principal photographic societies of the United States have been invited to send exhibits, and many of them have agreed to do so. A portion of the space in the photographic department will be set aside for the work of newspaper men who use the camera to obtain material for illustrating news or special stories. Many novel and interesting photos will be there, and the value of the camera as an aid to newspaper work will be demonstrated. Prizes will be offered for the best camera-club exhibit, the best landscape, the best snap-shot, the best figure-work, and other branches.

The Brooklyn Academy of Photography will send all of the pictures which they will have at their own exhibition, which ends about May 5th. The New York Society of Amateur Photographers will probably send several hundred pictures now on exhibition in Philadelphia, and which include some of the first-prize photographs at the last London exhibition.

Fine Photographs.—We are in receipt of several fine photographs from J. C. Sunderlin, of Flemington, N. J. Two are of an old Revolutionary landmark, another is a study of cactus flowers against a black background. The above subjects are fully equal to Mr. Sunderlin's portrait work.

The Tele-Photo Principle.—The first practical attempt to combine the properties of the telescope, microscope, and objective, appears to have been by Mr. D. S. Holman, of Philadelphia. In the proceedings of the American Philosophical Society for May, 1891, the following minute appears:

"Mr. D. S. Holman made an oral communication in relation to a new microscope, lately invented by him, by which objects distant from its front lens over two and a half feet could be readily examined. For example, at that distance a Salamander of a few inches in length would appear some thirty inches in length, and its whole circulation of the blood would be plainly visible. It is really a short focus telescope."

This apparatus, known as the tele-microscope, we are told, was also used for making negatives and projections.

The Trokonet.—A new magazine hand camera, under above title, it is announced will be put on the market during the coming spring.

Novel Use of the Optical Lantern.—During the lecture delivered by Mr. Witmer Stone at the American Academy of Natural Sciences, a somewhat novel use was made of the optical lantern by Prof. D. S. Holman. In addition to the slides, a number of bright plumed birds were shown to illustrate the lecture. When it became necessary to show the latter Prof. Holman removed his objective, and threw a strong pencil of light through the condensers upon the specimens, producing a fine effect, especially where colors of a metallic lustre appeared, the colors sparkling as they would in nature under a tropical sun.

Dr. Max Wolf, the noted photo-astronomer, has been appointed to the new chair of astronomy at the University at Jena.

A Photographer's Advice.—A correspondent of the *Deutsche Photographen Zeitung*, writing from Chicago, gives the following piece of advice to prospective emigrants from the fatherland, which applies by no means alone to photographers:

"America is a great country, with unlimited wealth and riches, the road to which however is only to be reached by very hard work, and the toughest endurance and strongest will-power. If you believe yourself in possession of these qualifications, then line your pocket with a good piece of money, learn if possible before you leave home to speak the language, and then try your luck."

Photography and Art.—Among the many favorable comments in the local press upon the exhibition at Philadelphia, the *Evening Telegraph* editorially mentions. How far photography can legitimately come to the aid of art is a question that has been much under discussion by artists and amateurs, and one in which argument is not likely to establish satisfactory conclusions. As a profession photography makes little claim to recognition from the artistic fraternity, but the introduction of the amateur element of late years has put a different complexion on affairs, and the professional photographers themselves are obliged to give more heed to the artistic side of their calling. Among the amateurs the painters, and especially the landscape-painters, have taken an active lead, and as their purpose is distinctively the pursuit of the picturesque, the picture-making capacity of the camera has been through their agency very rapidly developed. What progress has been made in this direction the annual exhibitions of the allied societies has constantly made known. These exhibitions are held under the auspices of the Photographic Society of Philadelphia, the Boston Camera Club, and the New York Society of Amateur Photographers. The sixth annual display was opened yesterday at the Academy of the Fine Arts, and the reports made so far indicate that it is the largest and most important of the series. It is an international exhibition, and of the two hundred contributors about one-quarter are from foreign lands,—England, Germany, Australia, Japan, Spain, Buenos Ayres, India, Canada, and other lands being represented. The collection is exceedingly interesting, and the revelation it affords of the picturesque uses to which the camera can be put by the artistic amateur, will be of permanent value in determining the just relation of photography to the fine arts.

Photo-Etching.—An important improvement in photo-etching processes is said to have been recently effected by the admixture of the etching acid with the developing agent, the effect being to increase the range of gradation, and, at the same time, simplify the process. It would be possible to emulsify etching acids or salts with a solvent of bitumen. But whether this would interfere with the developing process, and whether chemical or electro-chemical etching would proceed uniformly at the same time, is a question upon which we must reserve any expression of opinion. Ordinary gelatine is readily soluble in hydrochloric acid solution. But the statement that the insoluble form of gelatine is unaffected in any way by the acid is to be taken for what it may be worth.

Photographic Hints and Formulae.

A Red Printing Process.—In a small quantity of water mix 72 grammes of nitrate of uranium and 20 grammes of nitrate of copper; then neutralize the solution with a little carbonate of soda, and make up with water to measure a litre. Paper sized with gelatine or arrow-root is floated in the solution for a minute or two, and dried in the dark. Printing is carried out beneath the negative until the image is fairly visible. It is then developed with an 8 per cent. solution of potassium ferrocyanide until the required density is obtained. Fixing is accomplished by well washing with plain water. If sepia tones are required the uranium-copper solution is neutralized with ammonia, and the developing solution made of 2 per cent. ferrocyanide only.—*M. Letellier, in Revue Photographique.*

Orthochromatic Photography.—Messrs. W. K. Burton and K. Arito, at a recent meeting of the Photographic Society of Japan, stated that they had set themselves the task of getting photographs showing a brilliant pure scarlet, a bright but darkish blue, and a pure chrome yellow, in their true value. If these could be shown truly, all other colors could.

They had succeeded best with a mixture of eosine and cyanine. Eosine was a strong sensitizer for the yellow and the green, cyanine for the red and the orange.

The following formula was used:—

Cyanine solution, 1 part in 1000	1 part
Eosine “ 1 “ “ 1000	1 “
Ammonia, 10 per cent. solution,	4 “
Water (distilled),	14 “

The plates were bathed for two minutes and dried. Of course such plates need the extremest care in working.

A yellow screen was used with plate glass sides, inclosing $\frac{1}{4}$ inch thickness of the following solution:—

Picric acid	1 part
Water	500 “

The intense but very light yellow color of a picric acid solution seemed particularly well suited to orthochromatization. With a denser solution than that mentioned it was possible to overdo the orthochromatization. The exposure needed was ten times that with the same plate untreated, but without any yellow screen.

Black Ferro-Prussiate Prints.—Two methods for turning an ordinary blue-print black are given in a French chemical paper, both differing somewhat from the process usually employed.

I.—The blue-prints are first passed through water acidulated with nitric acid, then at once placed in a bath of

Carbonate of soda 50 grammes.
Water 1 liter.

When the print has changed to an orange color, place in a bath of

Gallic acid 50 grammes.
Water 1 liter.

When desired black tone is reached, wash in water slightly acidulated with muriatic acid.

II.—

Water 1 liter.
Borax 70 grammes.

Dissolve, and add sulphuric acid until solution turns blue litmus red. Then neutralize with ammonia, and add

Red catechu 10 grammes,

shaking the mixture until dissolved. Immerse the blue-print for a few seconds, until the desired black tone is obtained. Wash well in running water.

The solution of the latter process should keep well, and can be used over and over.

Celloidin Paper.—This paper, a species of Aristo paper, now in great favor in Europe, is said to give fine results, and, it is claimed, will prove the copying-out paper of the future. The manufacturers give the following formulæ :

Preservation.—Keep paper dry, in either a tin or wooden box.

Printing.—Continue until the highest lights commence to color.

Toning and Fixing.—Can be done in a combined or in separate baths. The latter is more troublesome, but the prints are more permanent.

Washing.—When separate baths are used, pass through three, of one-quarter hour each. To the second washing add 50 grammes salt to each liter of water, then tone in gold bath, judging depth of tone by looking through the print. The tone which the finished print will show is between the blue tone on the surface and the red tone seen by looking through the print.

Fixing.—Use neutral hypo solution 1 : 10. Time, ten minutes.

Final Washing.—Half an hour in running water, or eight to ten changes of water of one-quarter hour each.

Retouching.—To be done with neutral tint, India red, sepia, and an excess of albumen.

The prints are to be trimmed wet, laid on top of each other, and the water pressed out. They can then be mounted with stiff starch paste on cartons, and dried.

Burnishing.—The prints are to be well soaped. In burnishers having two rollers there is no necessity for soaping.

Toning Bath.—Stock solution I.—

Distilled water	500 ccm.
*Bi-fused acetate of sodium	20 grammes.
Chlor. Gold (dissolved in 100 ccm. water) . .	1 gramme.

Stock solution II.—

Distilled water	500 ccm.
Sulpho-cyanide of ammonium,	10 grammes.
Chlor. gold (dissolved in 100 ccm. water) . .	1 gramme.

For albumen tones use : No. I., 100 ccm. ; water, 100 grammes.

For blue tones : No. I., 100 ccm. ; water, 100 ccm. ; No. II., 1 to 5 ccm.

For platinum tones : No. I., 100 ccm. ; No. II., 10 to 20 ccm. ; water, 100 ccm.

Combined Toning and Fixing Bath.—

Water	2000 ccm.
Hypo	500 grammes.
Sulpho-cyanide of ammonium,	55 "
Acetate of lead,	20 "
Nitrate of lead,	20 "
Citric acid,	15 "
Alum,	15 "

To the above add 150 ccm. of a solution either of chloride of gold or chloro-aurate of sodium, 2 : 200, or chloro-aurate of potassium, 1 : 200.

The bath should be filtered after settling. It is then ready for use, and should be used at a uniform temperature of 60-70° F. The prints may be placed in the bath without previous washing. After toning wash as usual.

* "Dopp.-geschmolzenes essigsaures Natron."

Action of Light on Phenol.—The authors in this paper describe the methods they adopted and their results for the determination of the cause of the red coloration which takes place when carbolic acid is exposed for any length of time to light. While they have established that pure phenol reddens in the dark when exposed to the action of both air and moisture, their experiments show that this action is accelerated by light.—*Drs. Kohn & Fryer, in Chem. Journal.*

Photographic Action with Salts of Cerium.—M. Vidal, in *Monitor Photographie*, states that Messrs. Lumiere have observed that, like iron and manganese, cerium forms both cerous and ceric salts. The latter are reduced to the serous compounds by the action of light.

To Blacken Leather-Covered Hand Cameras :

Glue	4 oz.
Vinegar	1½ pt.
Gum arabic	2 oz.
Black ink	8 oz.
Isinglass	2 dr.

Break the glue in pieces, put in a basin, and pour over it about a pint of the vinegar ; let it stand until it becomes perfectly soft. Put the gum in another vessel with the ink, until it is perfectly dissolved ; melt the isinglass in as much water as will cover it, which may be easily done by placing the cup containing it near the fire about an hour before you want to use it. To mix them pour the remaining vinegar with the softened glue into a sand pan upon a gentle fire, stirring it until it is perfectly dissolved, that it may not burn on the bottom, being careful not to let it reach the boiling point—about 80 deg. C. is the best heat. Next add the gum, let it reach the same heat again ; add the isinglass. Take from the fire and pour it off for use. To use it, put as much as is required in a saucer, beat it sufficiently to make it fluid, and apply a thin coat with a piece of dry sponge. If the article is dried quickly, either in the sun or by fire, it will have the better polish.

Black Stain for Wood :—

Extract of logwood	15 grams.
Chromate of potash	2 grams.
Water	1 liter.

The extract of logwood is dissolved in boiling water, and the chromate then added. The color of the liquid is a deep violet, which changes to pure black in contact with the wood.—*Science en Famille.*

Society Notes.

St. Paul Camera Club.—A new camera club was organized at St. Paul, Minn., March 6th, 1893. The new club starts out with twenty-five active members. After May 1st large and permanent quarters will be occupied; the regular meetings are held on the second Tuesday of each month. Following officers have been chosen:

President, A. M. P. Cowley; Vice President, D. F. Brown; Secretary, W. J. Sonnen; Treasurer, Wm. B. Thorne.

Board of Directors.—The above officers and the following: James Paris, Ed. E. Zimmerman, C. H. Buckley, Andrew Thaanum, Lorn Campbell.

Standing Committees.—House committee, D. F. Brown, Wm. B. Thorne, Ed. F. Zimmerman. Membership committee.—C. H. Buckley, W. J. Sonnen. Lantern committee.—James Paris, Andrew Thaanum, Lorn Campbell. Committee on meetings.—Ed. F. Zimmerman, A. M. P. Cowley, James Paris.

The Newark Camera Club.—The annual meeting of the Newark camera club was held at the club rooms, 828 Broad St., Monday evening, April 10th, and the following officers elected for the ensuing year:

President, Thos. A. Hine; Vice President, J. M. Foote; Secretary, D. S. Plumb; Treasurer, C. C. Hine.

Executive Committee.—Wm. Archibald, Harry W. Smith, Wm. A. Haley, Chas. Leroy, Frank S. Olds, A. G. Munn, H. C. McDougall, J. M. Foote, Fred. A. Schuetz.

A vote of thanks was tendered to the retiring president, Mr. Paul L. V. Thiery, for the able manner in which he had filled the office during the past year. Mr. Thiery declined a renomination on account of pressing business engagements.

London Camera Club.—The Seventh Annual Photographic Conference of the London Camera Club, together with an exhibition of photographs and of lantern slides, and the annual dinner, was held in the theatre of the Society of Arts, on Wednesday and Thursday, April 12th and 13th, under the presidency of Captain W. de W. Abney, F. R. S. The full text of the papers read, and a report of the discussions, will appear in the Conference number of the *Camera Club Journal*, which will be obtainable from the Club.

CALIFORNIA CAMERA CLUB,

SAN FRANCISCO, April 1, 1893:

To the Editor of the AMERICAN JOURNAL OF PHOTOGRAPHY,
1030 Arch Street, Philadelphia.

Dear Sir:—At the next annual meeting of the Club, new officers to serve for the ensuing year will be elected. Before I retire, and as one of my last official duties, I desire to express, in behalf of the Club, our appreciation of the many courtesies we have received at your hands. To the JOURNAL and the other photographic magazines which have so kindly and courteously treated us is due much of the prosperity it has been our good fortune to enjoy; and that we are not unappreciative of your consideration of us, it is my pleasing duty to evidence. That the very pleasant relations we enjoy will be continued, goes without saying.

Sincerely and faithfully,

CHAS. ALBERT ADAMS, *Cor. Sec'y.*

The Photographic Society of Japan.—A regular meeting of the above-named Society was held on Friday, March 3d, at the rooms of the Geographical Society, Nishi-Konyacho, Kiobashi, Tokyo, beginning at 5 p. m., Prof. C. D. West in the chair.

The following gentlemen were unanimously elected members of the Society: Mr. G. Tanaka, Mr. O. Keil, Mr. F. Nabholz, Mr. O. Bergmann, Mr. F. Bengen, Mr. F. H. Trevithick, and Mr. H. Hosoi.

Photographic Society of Philadelphia.—At the annual meeting held on April 12th, the following members were chosen to serve as officers for the ensuing year: President, Joseph H. Burrows; vice-presidents, Edmund Stirling, C. R. Pancoast; secretary, R. S. Redfield; treasurer, George Vaux, Jr.; directors, John C. Browne, J. G. Bullock, Samuel Sartain, G. M. Taylor, Fredk. E. Ives, Wm. H. Rau, John Carbutt, A. W. Robinson, Dr. H. M. Howe, S. Castner, Jr., J. H. Ewing, C. W. Miller.

Scheele.—The one hundred and fiftieth anniversary of the birth of Scheele, the great Swedish chemist, on December 9th, 1892, was made the occasion of a great celebration in his native country. In Stockholm a splendid monument to Scheele's memory was unveiled. His collected works, also, are soon to be published.

OUR ILLUSTRATIONS.

Frontispiece.—From a negative by Seavy and Fowler, New Castle, Penna., on the Bradfish and Pierce aristotype paper. Papers of this class are rapidly superseding the old-time albumen prints with progressive photographers. The Bradfish and Pierce aristotype paper, upon which our frontispiece is printed, is known for the richness and transparency in the shadows, fine half-tones, pure white and permanent prints. Another peculiarity of this make of aristotype paper is that it neither curls nor cracks under any circumstances.

Art in Portraiture.—Our extra illustrations, eight full-page engravings, are specimen prints from "Photographic Mosaics," illustrating a paper on "Variety, Individuality, and Invention," one of six papers by Dr. E. L. Wilson on the art in portraiture, the series being illustrated with forty-eight engravings, the object of writing them being to excite photographers to take greater interest in the production of good work. The series will form an important feature of the popular annual.

A Prosperous Photographer.—Mr. J. D. Strunk, of Reading, Pa., contemplates having the finest gallery in Pennsylvania outside of Philadelphia, and in structure and fixtures second to none. Temporary quarters have been secured, so that the building will not interfere with the business. The old quarters have already been razed to the ground. The new building will contain all modern improvements, and have all facilities for turning out the best work promptly. It is expected that the opening will take place about October 1st.

Artificial Frost Pictures.—Mr. E. W. Dallas, whose crystallographic experiments are referred to in our leading article this week, states that figures very similar to frost pictures sometimes seen on window panes can be obtained by the employment of sulphate of copper and magnesia, a salt that crystallizes under the rhombohedral system, the same with that of ice. This salt crystallizes in films from centres in a most remarkable manner in four different modes, viz.: the true circular, the laminate, a branched or dendritic form, and another which may be described as the ostrich plume form. All these different forms may be observed on the plates, either singly or in combination, and produce most varied and singularly beautiful effects.—*Optician.*

In the Twilight Hour.

A FAULT once denied is twice committed.

A CHARITABLE man is the true lover of God.

IN courtesy rather pay a penny too much than too little.

"If," says Addison, "you wish success in life, make perseverance your bosom friend, experience your wise counselor, caution your elder brother, and hope your guardian genius."

"THE Lord's prayer," says Paley, "for a succession of solemn thoughts, for fixing the attention upon a few great points, for suitability to every condition, for sufficiency, for conciseness without obscurity, for the weight and real importance of its petition, is without an equal or a rival."

LAVISHNESS is not generosity.

A MOUSE in time may shear a cable asunder.

BETTER go to bed supperless than rise in debt.

WIT without judgment is a weary thing to the company.

'Tis not your posterity but your actions that will perpetuate your memory.

HE that cannot forgive others breaks the bridge over which he must pass himself, for every man has need to be forgiven.

MONEY cannot buy merit.

THAT is not ours which is got by unlawful means.

IF you have one true friend, you have as much as your share comes to.

WHOEVER values in himself the gift of story-telling has need of a good memory, and ought frequently to shift his company.

THRIFT is the philosopher's stone.

THEY hurt themselves that wrong others.

WHERE passion is high, there reason is low.

THE society of ladies is a school of politeness.

THE time to come is no more ours than the time past. The way to avoid great faults is to beware of less.

A WHITE wall is a fool's paper.

WE are slow to believe what if believed would cause us sorrow.

THE value of a gift is immeasurably enhanced by the grace with which it is presented.

YOU cannot properly call a man happy because he possesses much. He more justly claims the title of happy who understands how to make use of the gifts of Providence, and how to endure the privations of poverty.

ONE swallow does not make a spring.

AVOID egotism, and pretend not to be either better or worse than you are.

HE who comes to any decision while one side is unheard, even though his decision should be just, is not just himself.

ALL affectation of gracefulness in serious matters or in adversity is altogether unseasonable and most adverse to compassion.

Literary and Business Notes.

DIE PHOTO KERAMIK. By the late Julius Kruger. A. Hartleben, Vienna, Pesth, and Leipzig. Second Edition. Number 54 of the Chemical-Technical Library.

This work is a hand-book on the art of burning in photographic pictures upon porcelain, enamel, glass, metals, etc. The present edition has been enlarged and brought up to date by Prof. Jacob Husnick, of Prague. It is embellished with 21 illustrations in the text, and will prove a valuable technical authority upon this branch of the photographic art-science. Every department with all its detail is fully and intelligently treated. We expect in the near future to translate and print some extracts from this excellent work for the benefit of our American readers.

AMATEUR PHOTOGRAPHY. W. I. Lincoln Adams. The Baker and Taylor Company, N. Y.

A handy little brochure consisting mainly of papers on above subject published in the *Christian Union*, *Outing*, and *Photo Times*. The entire matter, however, has been carefully revised, rearranged, and brought up to date, and in its present more convenient form will no doubt cover a wide field of usefulness among the daily increasing number of amateur photographers.

THE BOSTON CAMERA CLUB. By Benjamin Kimball. Reprinted from the *New England Magazine*, April, 1893.

An illustrated pamphlet, well gotten up on fine paper. In addition to the paper, with its wealth of illustrations, the pamphlet contains the names of the officers for 1893, a complete list of the members, and a plan of the club rooms.

MESSRS. SHULL AND WINSOR give notice that Mr. E. A. Gilbert is no longer connected with them, and that henceforth the business will be conducted by them under the name of the Diamond Aristotype Company, and that they are now prepared to fill all orders for the prepared aristotype paper, so well and favorably known to the photographic public.

E. A. GILBERT, of Jamestown, N. Y., has withdrawn from the old firm, and is now fitting up a fine factory for making aristotype paper upon his own account. The new brand will be known as the "Reliable" aristotype paper. Papers of this class are daily growing in favor with the photographers throughout the country, and the new concern will without doubt merit a liberal share of patronage.

A KODAK VICTORY.—The Eastman Company send word that the Commissioner of Patents has recently reversed the examiner's decision in the suit between the Rev. Hannibal Goodwin and the Eastman Kodak Company. It will be remembered that Mr. Goodwin claimed priority to certain processes in the manufacture of sensitive film on which the Eastman Kodak Company holds patents. In February last a decision favorable to Mr. Goodwin was made by the patent examiner, but this has now been reversed by the commissioner, and in case Mr. Goodwin decides to pursue the matter further he must assume the burden of proof.

The Rochester concern holds several other and much broader patents covering the manufacture of films, so that even if Mr. Goodwin should finally get his patent, which now seems hardly possible, he would still be unable to make the sensitive film, and as the Eastman people can make film without the process involved in this interference, he would also be unable to prevent them from continuing the manufacture of film.

From whatever standpoint the case is viewed, the Eastman Kodak Company seems to have decidedly the best of it.

WE understand that a new catalogue is shortly to be issued by the great opticians of Philadelphia, Queen & Co. As usual with catalogue compilers, they are behind-hand in publishing, but will probably reach the public with this new catalogue within a week or so.

PHOTOGRAPHIC PATENTS.

THE following list of patents relating to the photographic interests, is especially reported by Franklin H. Hough, solicitor of American and Foreign patents, No. 925 F. St. Washington, D. C.

ISSUE OF FEBRUARY 28th, 1893.

492,696,—Photographic camera. E. W. Perry, Jr., assignor of one half to E. Kepper, Adams, Mass.

492,703,—Photographic camera. J. Zenk, Schlusselfeld, Germany.

492,642,—Photographic camera, registering device. P. Tournachon, Paris, France.

ISSUE OF MARCH 14th, 1893.

493,365,—Cameras. Ground-glass adjustor for. G. W. Low and W. Shakespeare, Jr., Kalamazoo, Mich.

493,426,—Photographs of moving objects. Apparatus for exhibiting. T. A. Edison, Llewellyn Park, N. J.

ISSUE OF MARCH 21st, 1893.

494,031,—Album. G. Schwab, New York, N. Y.

493,747,—Photographic camera. H. A. Benedict, Brooklyn, N. Y.

494,097,—Photographic camera. J. A. Davison, Polo, assignor to Aladdin Camera Company, Chicago, Ill.

494,022,—Photographic printing device. W. Ohse, Dessau, Germany, assignor to F. Heur, New York, N. Y.

ISSUE OF MARCH 28th, 1893.

494,128,—Camera-lens. E. Decker, Cassopolis, Mich.

494,256,—Camera-shutter. W. H. Lewis, Huntington, assignor to E. and H. T. Anthony & Co., New York, N. Y.

494,517,—Photographic camera. W. A. Armstrong, assignor to Armstrong Camera Co., Milwaukee, Wis.

494,164,—Magazine camera. R. F. Rice, Hartford, Conn.

494,354,—Photographic camera. J. M. Tracy, New York, N. Y. and G. S. Hodges, Orchard Lake, Mich.

494,400,—Photographic camera. A. Vanderbeck, Hartford, Conn.

494,306,—Photographic film. T. Sault, New Haven, Conn.

494,526,—Photographs on glass. Making transparent. F. B. Forster, New York, N. Y.

494,401,—Tripod or stand for cameras or other purposes. A. Vanderbeck, Hartford, Conn.

